

Contributions to the Knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China

Part 27. Genus *Quedius* STEPHENS, 1829.

Subgenus *Microsaurus* DEJEAN, 1833. Section 15

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Abstract Taxonomic and faunistic data on the species of the genus *Quedius* subgenus *Microsaurus*, from the People's Republic of China are provided. Twelve species are described as new: *Q. leang* (Yunnan), *Q. gongga* (Sichuan), *Q. haan* (Sichuan), *Q. jyr* (Sichuan), *Q. biann* (Sichuan), *Q. goong* (Yunnan), *Q. jaang* (Yunnan), *Q. kwang* (Yunnan), *Q. pyn* (Yunnan), *Q. terng* (Yunnan), *Q. fabbrii* (Sichuan) and *Q. lanugo* (Yunnan). Tergite 10 of the female genital segment of *Q. euanderoides* SMETANA, 2004 is described and illustrated for the first time. *Quedius birmanus* CAMERON, 1932 is placed in synonymy with *Quedius antennalis* CAMERON, 1932 (*syn. nov.*). *Quedius antennalis* is for the first time recorded from Fujian and Guizhou, *Quedius chremes* from Hubei, *Q. ennius* from Tibet, *Q. huenn* from Yunnan, *Q. antoni* from Tibet, *Q. raan* from Hubei and Sichuan, *Q. nireus* from Yunnan, *Q. cingulatus* from Yunnan and *Q. guey* from Hubei.

This is the twenty-seventh of a series of papers dealing with the Quediina of the People's Republic of China. It presents the descriptions of further 12 new species of the subgenus *Microsaurus* DEJEAN, 1833. Many of these new species were collected as recently as in the summer 2005 during a joint, unfortunately too short and too “wet” field trip of the author and Michael SCHÜLKE (Berlin) to the Gaoligong Shan in north-western Yunnan near the Myanmar border. Other new species were known to the author for some time, but their descriptions were postponed for various reasons.

The Species-group affiliation (see SMETANA, 2001, 206–215) of the new species is as follows: *Q. leang* (Yunnan) is a member of the *Apicicornis* Group; *Q. gongga* (Sichuan) and *Q. haan* (Sichuan) are members of the *Mnemon* Group; *Q. jyr* (Sichuan), *Q. biann* (Sichuan), *Q. goong* (Yunnan), *Q. jaang* (Yunnan), *Q. kwang* (Yunnan), *Q. pyn* (Yunnan), *Q. terng* (Yunnan), *Q. fabbrii* (Sichuan) and *Q. lanugo* (Yunnan) are members of the *Euryalus* Group. The *Euryalus* Group is by far the most speciose group of the subgenus *Microsaurus* that may be divided in several well defined subgroups, based mainly on male sexual characters.

The symbols used in the text, when referring to the depositions of specimens, are

as follows:

ASC	Collection of Aleš SMETANA, Ottawa, Canada
FMNH	Field Museum of Natural History, Chicago, USA
MCS	Collection of Michael SCHÜLKE, Berlin, Germany
NSMT	National Science Museum, Tokyo, Japan
NMW	Naturhistorisches Museum, Wien, Austria

The number of paratypes, if applicable, is given for each locality behind the geographical data, followed by the acronym of the collection in which the paratype(s) are deposited in brackets. All data are presented in full for holotypes and allotypes.

***Quedius (Microsaurus) antennalis* CAMERON**

Quedius antennalis CAMERON, 1932, 285.

Quedius birmanus CAMERON, 1932, 284 (syn. nov.).

New records. [Fujian]: Wuyi Shan Nat. Res. Sangan env. (900 m), 30.V–12.VI.2001, Hlaváč & Cooter leg., 1♂, 1♀ (FMNH, ASC). [Guizhou]: Leishan Co., SE Kaili, NE Leishan, Leigong Shan, E slope, 26°22.71'N 108°12.71'E, ca 0.5 km W pass, ca 1750 m, 17.VI.2001, leg. Schillhammer & Wang (CWBS 437), 1♂ (NMW).

Comments. These are the second and third records of this species from mainland China, and the first ones from the provinces of Fujian and Guizhou.

In one of my previous papers (SMETANA, 2002, 139), I suggested, based on the chaetotaxy of the pronotum, that *Q. birmanus* may be identical with *Q. antennalis*. The two additional specimens confirm that the position of the large lateral puncture on the pronotum is useless for distinguishing these two species and I therefore place *Quedius birmanus* CAMERON, 1932 in synonymy with *Quedius antennalis* CAMERON, 1932 (syn. nov.).

***Quedius (Microsaurus) inquietus* CHAMPION**

Velleius inquietus CHAMPION, 1925, 107.

Quedius inquietus: SMETANA, 1997b, 129.

New record. [Yunnan]: Diqing Tibet. Aut. Pref., Deqin Co., Meili Xue Shan, E-side, 14 km W Deqin, 2580 m, 28°27.47'N 98°46.35'E, 11.VI.2005, M. Schülke [C2005–09] [1] (MSC).

Comment. The specimen was taken in a predominantly deciduous forest by sifting various debris around decaying wood on the forest floor.

***Quedius (Microsaurus) przewalskii* REITTER**

Quedius przewalskii REITTER, 1887, 211.

New records. [Sichuan]: Qionglai Shan, Mou Pi Shan mount., Barkam, 15 km S of Zhuokeji, 10.–30.VI.2004, R. Fabbri leg. [2] (ASC, MSC); Barkam, pass between

Zhuokeji-Lianghekou, 4100 m, alpine zone, 10.–30.VI.2004, R. Fabbri leg. [4] (ASC, MSC).

Comments. The species seems to prefer habitats in the upper montane forests, and in the subalpine and alpine zones.

***Quedius (Microsaurus) chremes* SMETANA**

Quedius chremes SMETANA, 1996 a, 10.

New records. [Hubei]: Dashennongjia mts. 31°5'N 110°3'E, 2500–2900 m, 23.6.–14.7.2003, leg. J. Turna [9] (ASC, NMW); same, but date 17.V.–13.VI.2004 [4] (ASC, NMW). [Sichuan]: Pass btw. Songpan & Nanping, E side, 3450–3500 m, 21.VI.2002, S. Murzin & I. Shokhin [1] (MSC).

Comments. These are the first records of this species from Hubei.

***Quedius (Microsaurus) bito* SMETANA**

Quedius bito SMETANA, 1996 a, 7.

New records. [Yunnan]: Diqing Tibet. Aut. Pref., Zhongdian Co., Xue Shan 23 km S Zhongdian, 3675–3725 m, 27°36.3'N 99°41.5'E, 2.VI.2005, M. Schülke [C 2005–02] [2] (MSC); same, but D. Wrase [1] (ASC); Diqing Tibet. Aut. Pref., Zhongdian Co., Bitai Hai lake area, 29 km ESE Zhongdian, 3540 m, 1.VI.2005, D. Wrase [01] [1] (ASC).

Comments. The specimens were taken by sifting leaf litter and dead wood, and from under dead wood and stones. Only one record of this species was known from Yunnan until now.

***Quedius (Microsaurus) acco* SMETANA**

Quedius acco SMETANA, 1996 a, 4.

New record. China: [Yunnan]: Zhongdian Co., 51 km SSE Zhongdian, 27°25.3'N 99°56.5'E, 2970 m, 16.–18.VIII.2003, A. Smetana [C124].

Comment. The specimen was taken from a pitfall trap set in a mature mixed forest with lush undergrowth and lots of rotting wood on the floor. The species is at present known from Gansu, Sichuan and Yunnan.

***Quedius (Microsaurus) ennius* SMETANA**

Quedius ennius SMETANA, 1996 a, 16.

New records. China: [Yunnan]: Zhongdian Co., 48 km N Zhongdian, 28°16.6'N 99°45.7'E, 3220 m, 21.VIII.2003, 1♂, A. Smetana [C130] (ASC); Diqing Tibet. Aut. Pref., Deqin Co., Meili Xue Shan, E-side, 12 km SW Deqin, 28°25.30'N

90°47.48'E, 9.VI.2005, M. Schülke [C2005–07] [1] (MSC). [Tibet]: Basum Tso, 90 km W of Gyamda, 8.–9.VI.1997, Wrzecionko leg. [1] (MSC).

Comment. The specimen from 2003 was taken from a rotting soft Polyporus-like mushroom growing on an old tree stump. The specimen from Meili Xue Shan was taken by sifting forest floor litter in narrow valley of a small creek. This is the first record of this species from Tibet.

***Quedius (Microsaurus) kucerai* SMETANA**

Quedius kucerai SMETANA, 1996 b, 126.

New record. China: [Yunnan]: Zhongdian Co., 36 km ESE Zhongdian, 27°40.9'N 100°01.5'E, 3500–3550 m, 23.VIII.2003, A. Smetana [C133] [1] (ASC); same, M. Schülke leg. [1] (MSC).

Comment. Both specimens were collected by sifting various debris around dead old trees and pieces of wood (mushrooms) in a mature mixed forest (mainly *Betula*, *Abies*).

***Quedius (Microsaurus) bohemorum* SMETANA**

Quedius bohemorum SMETANA, 1997 c, 461.

New records. China: [Yunnan]: Zhongdian Co., 10 km SW Zhongdian, Xue Shan, 27°46.5'N 99°36.5'E, 3800 m, 20.VIII.2003 A. Smetana [C129] [3] (ASC); Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37.1'N 99°38.5'E, 3895 m, 15.VI.2005, A. Smetana [C161] [1] (ASC); same, but M. Schülke [C2005–05A] or D. Wrase [05] [2] (MSC); same, 6.–15.VI.2005, M. Schülke [C2005–05F] [1] (MSC); same, 3675–3725 m, 2.VI.2005, M. Schülke [C2005–02] or D. Wrase [02] [2] (MSC).

Comment. The specimens from 2003 were taken, together with those of *Q. farkaci*, *Q. cingulatus*, *Q. kabateki* and *Q. amicorum* in a primary *Betula*, *Abies*, *Rhododendron* forest by sifting various debris and fallen leaves around rotting wood on forest floor (mushrooms around).

The specimens from 2005 were taken in a disturbed mixed forest (mostly *Abies* and rhododendrons) by sifting forest floor litter and various debris around decaying wood on the forest floor. One specimen was also taken from a pitfall trap set in the same habitat. The species is at present known only from Xue Shan.

***Quedius (Microsaurus) farkaci* SMETANA**

Quedius farkaci SMETANA, 1997 c, 464.

New records. China: [Yunnan]: Zhongdian Co., 10 km SW Zhongdian, Xue Shan, 27°46.5'N 99°36.5'E, 3800 m, 20.VIII.2003 A. Smetana [C129] [5] (ASC);

Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37.1'N 99°38.5'E, 5.VI. or 6.VI.2005, 3850 m or 3895 m, A. Smetana [C152 or C153b] [9]; same, but M. Schülke [C2005–05] or D. Wrase [05] [14] (ASC, MSC); same, 23 km S Zhongdian, 27°38.3'N 99°41.5'E, 3675–3725 m, 2.VI.2005, A. Smetana [C148] [2] (ASC).

Comment. The specimens from 2003 were taken, together with those of *Q. bohemosum*, *Q. cingulatus*, *Q. kabateki* and *Q. amicornum* in a primary *Betula*, *Abies*, *Rhododendron* forest by sifting various debris and fallen leaves around rotting wood on forest floor (mushrooms around). The specimens from 2005 were taken by sifting leaf litter under rhododendrons near a snowfield and by sifting debris around rotting wood on forest floor.

Quedius (Microsaurus) kabateki SMETANA

Quedius kabateki SMETANA, 1997 c, 468.

New records. China: [Yunnan]: Zhongdian Co., 10 km SW Zhongdian, Xue Shan, 27°46.5'N 99°36.5'E, 3800 m, 20.VIII.2003 A. Smetana [C129] [8] (ASC); Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37.1'N 99°38.5'E, 5.VI., 6.VI. or 15.VI.2005, A. Smetana [C152, C153a, C161] [7] (ASC, MSC).

Comment. The specimens from 2003 were taken, together with those of *Q. cingulatus*, *Q. bohemosum* and *Q. farkaci* in a primary *Betula*, *Abies*, *Rhododendron* forest by sifting various debris and fallen leaves around rotting wood on forest floor (mushrooms around). The specimens from 2005 were taken by sifting various debris around rotting wood on forest floor. The species is known at present only from Xue Shan.

Quedius (Microsaurus) amicornum SMETANA

Quedius amicornum SMETANA, 1997 c, 470.

New records. China: [Yunnan]: Zhongdian Co., 10 km SW Zhongdian, Xue Shan, 27°46.5'N 99°36.5'E, 3800 m, 20.VIII.2003 A. Smetana [C129] [5] (ASC); same, D. Wrase [1] (MSC); Zhongdian Co., 55 km N Zhongdian, 3800 m, 28°19.8'N 99°45.7'E, 18.VIII.2003, M. Schülke [3] (ASC MSC); Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37.1'N 99°38.5'E, 3895 m, 5.VI. or 6.VI.2005, A. Smetana [C153b, C161] [10]; same, but M. Schülke [C2005–05] or D. Wrase [05A] [6] (MSC); Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan 23 km S Zhongdian, 3675–3725 m, 27°38.3'N 99°41.5'E, 2.VI.2004, A. Smetana [C149] [1].

Comment. Most specimens from “Xue Shan near lake” were taken by sifting rotting wood and various debris under the loose bark of fallen *Abies* trees; this seems to be the preferred habitat of this species.

***Quedius (Microsaurus) huenn* SMETANA**

Quedius huenn SMETANA, 2002, 146.

New records. China: [Yunnan]: Zhongdian Co., 36 km ESE Zhongdian, 27°40.9'N 100°01.5'E, 3500–3550 m, 23.VIII.2003, A. Smetana [C133] [1] (ASC); Zhongdian Co., 33 km ESE Zhongdian, 27°41.5'N 100°00.7'E, 3200 m, 24.VIII.2003, A. Smetana [C135] [1] (ASC); Diqing Tibet. Aut. Pref., Zhongdian Co., 33 km ESE Zhongdian, 3200 m, 27°41.5'N 100°00.7'E, 24.VIII.2003, M. Schülke [C03–14] [1] (MSC); same, 35 km ESE Zhongdian, 3450 m, 27°41.00'N 100°01.47'E, 3.VI.2005, M. Schülke [C2005–03] [1] (MSC).

Comments. The specimens were taken in mixed forests by sifting decaying wood with mushrooms on the forest floor, and by sifting tough orange-yellow mushrooms growing on a fallen deciduous tree (C135).

These are the first records of this species from Yunnan. It was previously known only from the type locality in Shaanxi (see SMETANA, 2002, 148).

***Quedius (Microsaurus) antoni* SMETANA**

Quedius antoni SMETANA, 1995, 233.

New records. [Sichuan]: pass Zheduo Shankou W Kangding, E slope, 3850 m, 29°58'N 101°23'E, 18.VII.1998, A. Smetana [C85] [2] (ASC); [Tibet]: mts. N of Ny-ingchi, 3900–4600m, 29°36.45'N 94°28.37'E, 19.–28.6.1996, L. & R. Businský [1] (ASC); [Yunnan]: Zhongdian Co., 10 km SW Zhongdian, Xue Shan, 3800 m, 27°46.5'N 99°36.5'E, 20.VIII.2003, A. Smetana [C129] [21]; same, D. Wrase [10a] [1] (MSC); Zhongdian Co., 55 km N Zhongdian, 3800 m, 28°19.8'N 99°45.7'E, 18.VIII.2003, M. Schülke [C03–07] [1] (MSC); same, D. Wrase [07] [3] (MSC); Zhongdian Co., Xue Shan 23 km S Zhongdian, 3675–3725 m, 27°38.3'N 99°41.5'E, 2.VI.2005, A. Smetana [C149] [1] (ASC); Diqing Tibet. Aut. Pref., Deqin Co., Meili Xue Shan, E side, 12 km SW Deqin, 2890 m, 28°25.30'N 98°47.48'E, 9/13.VI.2005, D. Wrase [07] [3] (MSC); same, M. Schülke [C2005–07A] [1] (MSC); same, A. Smetana [C160] [1] (ASC).

Comments. Specimens were taken in mixed and coniferous forests by sifting various forest floor debris, particularly around rotting wood with mushrooms.

This is the first record of this species from Tibet. It is at present known from Sichuan, Tibet and Yunnan.

***Quedius (Microsaurus) nireus* SMETANA**

Quedius nireus SMETANA, 1995, 240.

New record. [Yunnan]: Diqing Tibet. Aut. Pref., Zhongdian Co., Xue Shan 23 km S Zhongdian, 27°38.3'N 99°41.5'E, 3675–3725 m, 2.VI.2005, A. Smetana [C149] [18] (ASC, MSC).

Comments. The specimens were taken by sifting moist debris and needles under a pile of branches left behind from a felled *Abies*-tree.

This is the first record of this species from Yunnan. It was until now known from Gansu and Sichuan.

***Quedius (Microsaurus) raan* SMETANA**

Quedius raan SMETANA, 2002, 142.

New records. [Hubei]: Daba Shan, pass E of Mt. DaShennongjia 12 km NW Muyuping 31°30'N 110°21'E, 2050 m, 19.VII.01 A. Smetana [C112], or M. Schülke [CO1–13C] [3♂♂] (ASC, MSC); same data, but 22.VII.2001, leg. M. Schülke [CO1–13E] [2♂♂] (ASC, MSC); Dashennongjia mts., 2100–2900 m, 31.5'N 110.3'E 10.–14.6.2002, leg. J. Turna, 3♂♂ (ASC, NMW). [Sichuan]: Daxue Shan, ThetoLa Pass W Kangding, 4290 m, 30°04.35'N 101°48.06'E, 25.05.1997, M. Schülke, 1♂ (MSC); Daxue Shan, Kangding, Hotelzimmer verschleppt ?, 23.05.1997, M. Schülke, 1♂ (MSC).

Comments. These are the first records of this species from Hubei and Sichuan. The specimens from Hubei were taken in mixed deciduous forests by sifting various forest floor debris, rotting wood and moss.

The number of sensory peg setae on the underside of paramere that form two medial groups, varies from one to three peg setae in each group. The female of this species still remains unknown.

***Quedius (Microsaurus) haemon* SMETANA**

Quedius haemon SMETANA, 1995, 239.

New records. [Sichuan]: Daxue Shan, Hailuoguo, Glacier Park (Gongga Shan), Camp 2 >1, 1940–2500 m, 31.V.1997, D. Wrase [1] (MSC); Gongga Shan, Hailuoguo, in front of Glacier 1, 2850 m, 29°35'N 102°00'E, 7.VII.1998, A. Smetana [C76] [1] (ASC).

Comment. The specimen with the code C76 was taken in a broadleaved forest with shrubby undergrowth by sifting debris and humus accumulated between large rocks on the forest floor.

***Quedius (Microsaurus) cingulatus* SMETANA**

Quedius cingulatus SMETANA, 2004, 95.

New records. [Yunnan]: Xue Shan nr. Zhongdian, 27°49'N 99°34'E, 4000–4100 m, 23.VI.1996, A. Smetana [C36] [10]; same, 4200 m, 23.VI.1996, A. Smetana [C37] [4]; same, 4050 m, 24.VI.1996, A. Smetana [C38] [2]; same [C39] [7]; same, 4050 m, 24.VI.1996, A. Smetana [C40] [3]; same, 3900 m, 25.VI.1996, A. Smetana [C41] [5]; same, 4000 m, 14.–26.VI.1996, A. Smetana [C42] [1] (all ASC); Zhongdian

Co. 10 km SW Zhongdian, Xue Shan 27°46.5'N 99°36.5'E 3800 m, 20.VIII.2003, A. Smetana [C129] [4] (ASC); Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37.1'N 99°38.5'E, 3895 m, 5.VI. or 15.VI.2005, A. Smetana [C152 or C161] 26; same, but M. Schülke [C2005–05] [9] (MSC); Diqing Tibet Aut. Pref., Deqin Co., Baima Shan, pass 25 km SE Deqin, 28°19.38'N 99°05.47'E, 4225 m, 8.VI. or 5.–12.VI.2005, A. Smetana [C154 or C155] [10] (ASC); same, but M. Schülke [C2005–06] [34] (MSC); same, but D. Wrase [2] (MSC); Diqing Tibet Aut. Pref., Deqin Co., Baima Shan, E-side, pass 12 km SE Deqin, 4085 m, 10.VI.2005, M. Schülke [C2005–08], A. Smetana [C157] [17] (ASC, MSC); same, pass 15 km SE Deqin, 4330 m, 12.VI.2005, M. Schülke [C2005–10] [1] (MSC); Diqing Tibet Aut. Pref., Deqin Co., Meili Xue Shan E-side, 12 km SW Deqin, 28°25.30'N 98°47.48'E, 2890 m, 9. or 13.VI.2005, A. Smetana [C160] [6] (ASC). [Sichuan]: Ganzi Tibet. Aut. Pref., Kangding Co., Daxue Shan, Mu Ge Cuo, ob. See 15 km NW Kangding, 3700 m, 30°09'N 101°52'E, 3700 m, 27.VI.1999, leg. M. Schülke [5] (ASC, MSC); same, 27.VI.–5.VII.1999, D.W. Wrase [2] (MSC); same, Daxue Shan, Tsheto La pass 30°05'N 101°48'E, 4300–4500 m, 25.VI.1999, leg. M. Schülke [1] (MSC); pass btw. Songpan & Nanping, E side, 3450–3500 m, 21.VI.2002, S. Murzin & I. Shokhin [1] (MSC); pass btw. Pingwu and Nanping, 3100 m, 22.VIII.1999, Cavazzuti [1] (ASC).

Comments. The elytra of many specimens of the above material are more or less yellowish.

Quedius cingulatus prefers habitats in high montane forest and in the subalpine and alpine zones. Specimens were taken in deciduous (*Betula*, *Rhododendron*), mixed deciduous and coniferous forests, or in coniferous forests (mainly *Abies*) by sifting various debris and fallen leaves, often around rotting wood on forest floor, by sifting leaf litter under birches at the edges of a lake, and by sifting moss and fallen leaves under rhododendrons; specimens from higher elevations were taken by sifting fallen leaves and various debris under rhododendrons. *Quedius cingulatus* is the dominant species in forest habitats in Xue Shan, where it often occurs together with *Q. bohemo-rum* and *Q. kabateki*.

These are the first records of this species from Yunnan. The species is at present known from northern Yunnan and northern Sichuan.

Quedius (Microsaurus) euanderoides SMETANA

(Fig. 1)

Quedius euanderoides SMETANA, 2004, 101.

New records. [Yunnan]: Diqing Tibet Aut. Pref., Deqin Co., Meili Xue Shan E-side, 2890 m, 28°25.30'N 98°47.48'E, 2890 m, 9.VI. or 13.VI.2005, A. Smetana [C156, C160] [15] (ASC); same but M. Schülke or D. Wrase [45] (ASC, MSC); same, 14 km W Deqin, 2580 m, 28°27.47'N 98°46.35'E, 11.VI.2005, A. Smetana [C158] [3]

(ASC).

Comments. Specimens were taken by sifting moist fallen leaves and other debris along a small creek, by sifting moss, debris under bamboo, and by sifting various forest floor litter. The species seems to be endemic to Meili Xue Shan, a mountain range just west of the Mekong river valley.

Only males of this species were known until now. The female sexual characters are described below.

Female. First four segments of front tarsus similar to those of male, but less dilated, segment 2 about as wide as apex of tibia. Genital segment with tergite 10 wide, pigmented medioapically, abruptly narrowed into narrow, acute apical portion, with two long apical setae and with numerous shorter setae on pigmented portion (Fig. 1).

Quedius (Microsaurus) zheduo SMETANA

Quedius zheduo SMETANA, 1999, 235.

New record. [Sichuan]: Qionglai Shan, Mou Pi Shan mount., 3100–3750 m, Barkam, 15 km S of Zhuokeji, 10.–30.VI.2004, R. Fabbri leg. [7] (ASC, MSC).

Comments. The specimens were taken from pitfall traps set in a “mixed and relict coniferous forest”. The species was until now known only from the pass Zheduo Shankou (or Tsheto La pass—see SMETANA, 2002, 141) near Kangding. The occurrence of this flightless species in Qionglai Shan in the Barkam area is rather surprising. However, the specimens agree in all characters (particularly the male secondary sexual characters and the shape of the aedoeagus) entirely with those from the type locality.

Quedius (Microsaurus) emei SMETANA

Quedius emei SMETANA, 1997 a, 67.

New record. [Sichuan]: Jiajin Shan, 18 km E Jintang, 3550–3650 m, 11.–24.VI.2004, R. Fabbri leg. [6] (ASC, MSC).

Comment. *Quedius emei* was until now known only from Emei Shan. The occurrence in Jiajin Shan represents a substantial extension of its distributional range toward northwest.

Quedius (Microsaurus) guey SMETANA

Quedius guey SMETANA, 2001, 188.

New record. [Hubei]: Dashennongjia mts., 31.5'N 110.3'E, 2500–2900 m, 23.VI.–14.VII.2003, J. Turna leg. [1 ♂, 1 ♀] (ASC, NMW).

Comment. This is the second record of this species from Hubei.

Quedius (Microsaurus) leang sp. nov.

(Figs. 2–10)

Description. In all characters very similar to *Q. apicicornis* EPPELSHEIM, 1895 (see SMETANA, 1988, 192) but different as follows: entirely black, including elytra (elytra more or less dark bluish in *Q. apicicornis*), punctuation of elytra markedly denser.

Male. First four segments of front tarsus considerably dilated, sub-bilobed, each densely covered with modified, long pale setae ventrally, segment 2 about as wide as apex of tibia; segment 4 narrower than preceding segments. Abdominal tergite 8 with long, black lateral seta on each side before apex (Fig. 2) (missing in *Q. apicicornis*); sternite 8 with two long setae on each side, with moderately wide and deep subarcuate medioapical emargination (Fig. 3), somewhat wider and deeper than that of *Q. apicicornis*. Genital segment with tergite 10 wider and with more numerous setae on apical portion than in *Q. apicicornis* (Figs. 4, 11); sternite 9 markedly longer than that of *Q. apicicornis*, and with distinctly differently shaped basal portion (Figs. 5, 12). Aedoeagus (Figs. 6–8) quite similar to that of *Q. apicicornis*, but apical portion of median lobe somewhat differently shaped, less deeply emarginate apically, missing small hook at each side of apical emargination, present in *Q. apicicornis* (Figs. 7, 13), apical portion of paramere subparallel-sided with apex truncate and subemarginate, medial pair of setae extremely small (in *Q. apicicornis* apical portion of paramere of different shape with apex never truncate, medial pair of setae somewhat larger) (Figs. 8, 14); large sclerotized structure of internal sac markedly different from that of *Q. apicicornis* (Figs. 7, 13).

Female. First four segments of front tarsus similar to those of male, but less dilated; segment 2 vaguely narrower than apex of tibia. Genital segment with accessory sclerite markedly larger than that of *Q. apicicornis* (Figs. 9, 15); tergite 10 somewhat differently shaped, with markedly delimited medioapical pigmented portion, differently setose (Figs. 10, 16).

Length 8.5–9.5 mm.

Type material. Holotype (male) and allotype (female): China: “CHINA: N-Yunnan Nujiang Aut. Pr. Gongshan Co. Gaoligong Shan valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa, Canada.

Geographical distribution. *Quedius leang* is known only from the type locality in the extreme northwest Yunnan near the Myanmar border.

Bionomics. The specimens of the original series were taken by sifting moist dead vegetation and other debris close to the edges of a snowfield.

Recognition and comments. As it is apparent from the description, *Q. leang* is quite similar to *Q. apicicornis*, a rather variable species that is widely distributed in the Himalaya (see SMETANA, 1988, 194). However, the differences outlined above, particularly the presence of a pair of long setae on male tergite 8 and the differences in other male and female sexual characters support the specific difference. In both the holotype

and allotype the last four antennal segments are whitish-yellow with the tip of the last segment partially darkened, and on the abdomen the apical margin of segment 7 (fifth visible) and the tip of the abdomen are orange-yellow.

Etymology. The specific epithet is the Chinese word “leang”, which in one of its meanings means “a couple”. It refers to the close similarity of *Q. apicicornis* and *Q. leang*.

***Quedius (Microsaurus) gongga* sp. nov.**

(Figs. 17–22)

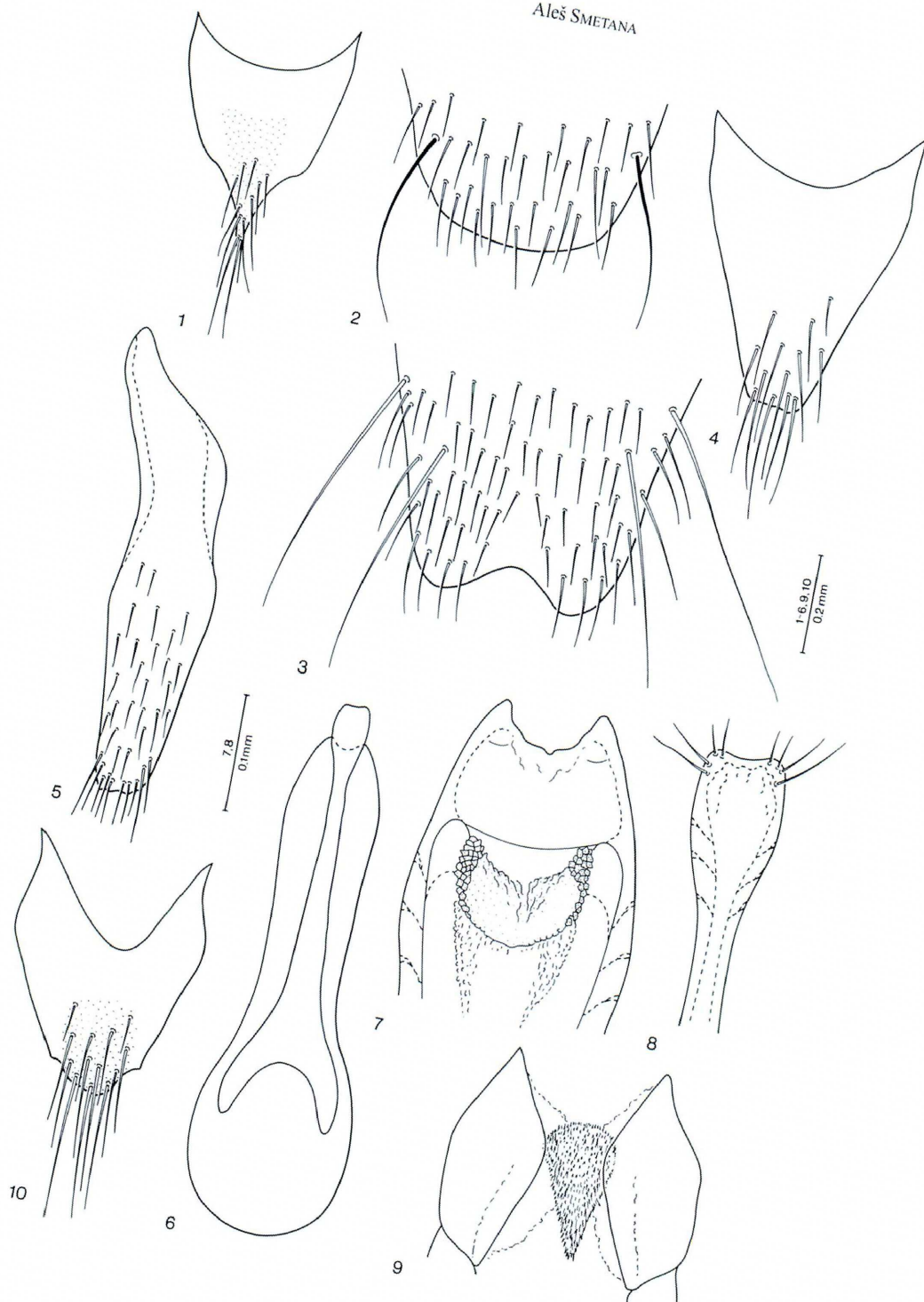
Description. In all characters similar to *Q. antoni* SMETANA, 1995 (see SMETANA, 1995, 233), but different mainly by the shape of the head with more complex chaetotaxy, and by both the male and female sexual characters. Head smaller and narrower, about as long as wide, eyes smaller and markedly more convex, tempora distinctly longer than eyes seen from above (index 1.21); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated distinctly closer to posteriomedial margin of eye than to posterior margin of head, two punctures posteriomedial of it between it and the two punctures at posterior margin of head; one puncture between posterior frontal puncture and posteriomedial margin of eye (with two small punctures posteriad of it); temporal puncture situated slightly closer to posterior margin of head than to posterior margin of eye; three punctures in front of posterior frontal puncture along medial margin of eye; tempora with numerous fine punctures.

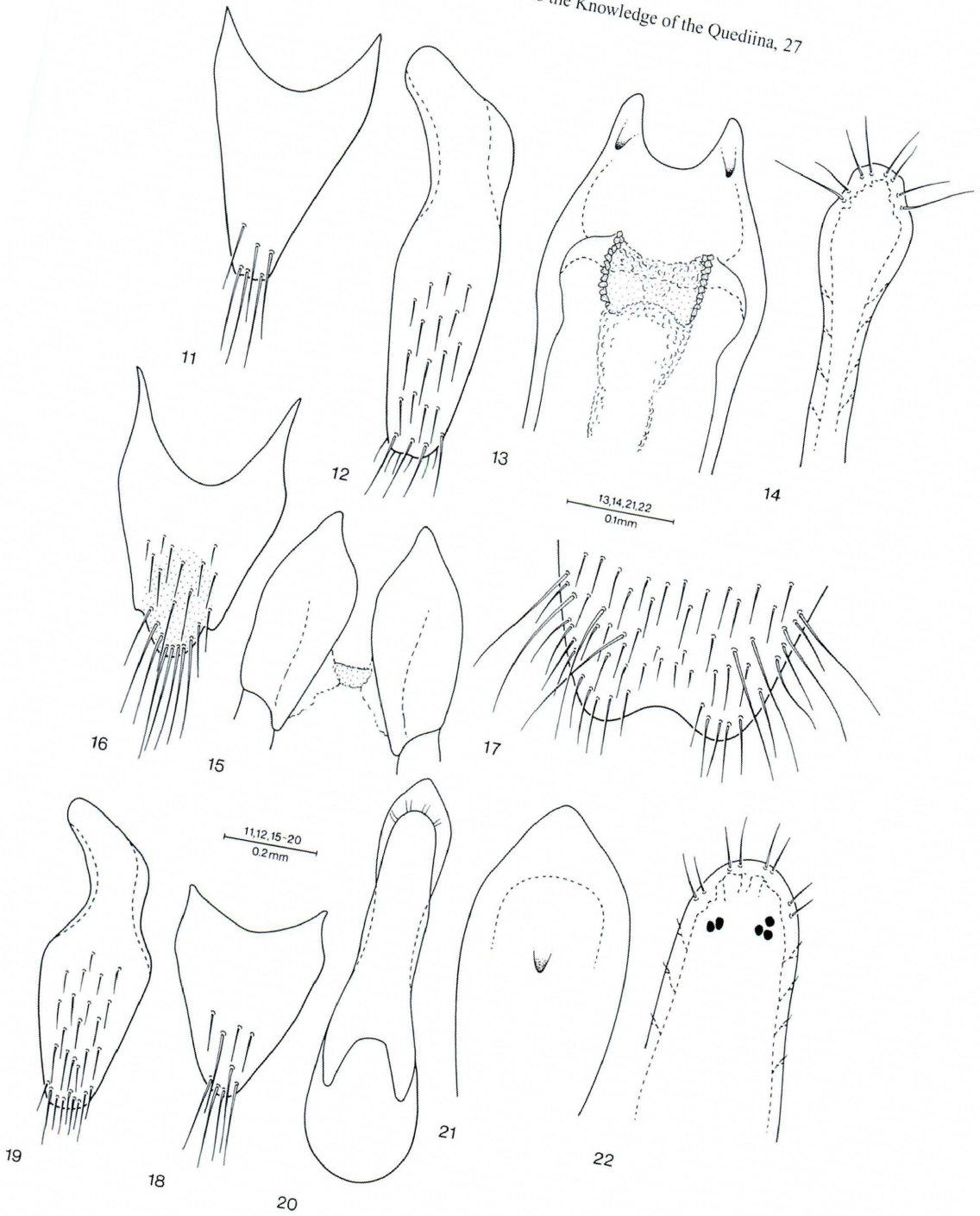
Male. First four segments of front tarsus markedly dilated, sub-bilobed, each covered with pale modified setae ventrally; segment 2 about as wide as apex of tibia; segment 4 narrower than preceding segments. Sternite 8 with four long setae on each side; with moderately wide and deep subarcuate medioapical emargination, small triangular area before emargination flattened and smooth (Fig. 17). Genital segment with tergite 10 markedly narrowed toward narrowly arcuate apex, with only a few setae on apical portion (Fig. 18); sternite 9 as in Fig. 19, sparingly setose and with two differentiated apical setae. Aedoeagus (Figs. 20–22) moderately large, median lobe slightly attenuate in middle portion, gradually dilated into triangular apical portion with subacute apex and a short medial carina on face adjacent to paramere. Paramere subparallel-

Figs. 1–10 (on p. 74). — 1. *Quedius euanderoides*: tergite 10 of female genital segment. — 2–10. *Quedius leang*: 2, apical portion of male sternite 7; 3, apical portion of male sternite 8; 4, tergite 10 of male genital segment; 5, sternite 9 of male genital segment; 6, aedoeagus, ventral view; 7, apical portion of median lobe with internal sac; 8, apical portion of underside of paramere; 9, gonocoxites of female genital segment with accessory sclerite; 10, tergite 10 of female genital segment.

Figs. 11–22 (on p. 75). — 11–16. *Quedius apicicornis*: 11, tergite 10 of male genital segment; 12, sternite 9 of male genital segment; 13, apical portion of median lobe with internal sac; 14, apical portion of underside of paramere; 15, gonocoxites of female genital segment with accessory sclerite; 16, tergite 10 of female genital segment. — 17–22. *Quedius gongga*: 17, apical portion of male sternite 8; 18, tergite 10 of male genital segment; 19, sternite 9 of male genital segment; 20, aedoeagus, ventral view; 21, apical portion of median lobe, ventral view; 22, apical portion of underside of paramere.

Aleš SMETANA





sided, with arcuate apex by far not reaching apex of median lobe; four fine setae at apex and two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming two medial groups below apex of paramere, each with two or three peg setae (Fig. 22). Internal sac without larger sclerotized structures.

Female. Unknown.

Length 7.2–7.5 mm.

Type material. Holotype (male): China: “CHINA Sichuan, Gongga Shan, Hailuogou, above Camp 3, 3200 m 7.VII.96 29°35'N 102°00'E C54”/“collected by A. Smetana, J. Farkač and P. Kabátek”. In the SMETANA collection, Ottawa, Canada.

Paratype: China: [Sichuan]: Gongga Shan, Hailuogou, Lake above Camp 2, 2750 m, 29°35'N 102°00'E 4.VII.1998 A. Smetana [C74]/1998 China Expedition J. Farkač, D. Král, J. Schneider & A. Smetana, 1 ♂, in the SMETANA collection.

Recognition and comments. *Quedius gongga* may be easily recognized, in addition to the shape of the aedoeagus, by the complex chaetotaxy of the head. *Quedius antoni* is particularly missing the three punctures in front of posterior frontal puncture along medial margin of eye. These punctures are present on the head of *Q. nireus* SMETANA, 1995 (two or three on each side), but *Q. nireus* has four punctures in each of the dorsal rows on the pronotum.

Etymology. The specific epithet is the name of the mountain range Gongga Shan, in which *Q. gongga* occurs, in apposition

Quedius (Microsaurus) haan sp. nov.

(Figs. 23–26)

Description. In all characters quite similar to *Q. raan* SMETANA, 2002 and different mainly by the differently shaped aedoeagus.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 vaguely wider than apex of tibia (index 1.09); segment 4 narrower than preceding segments. Sternite 8 with four long setae on each side, with medioapical emargination similar to that of *Q. raan*, but deeper (Fig. 23). Genital segment with tergite 10 and sternite 9 not appreciably different from those of *Q. raan*. Aedoeagus (Figs. 24–26) narrow and elongate; median lobe narrow, with lateral margins in apical third parparallel-sided and then narrowed into subacute, triangular apical portion with small tooth on face adjacent to paramere. Paramere elongate, slightly asymmetrical, slightly shifted toward left side of median lobe, with narrowly arcuate apex distinctly not reaching apex of median lobe; four fine setae at apex and two somewhat longer setae at each lateral margin below apex; sensory peg setae on underside of paramere situated in a similar way as those of *Q. raan* (peg setae on left side situated quite close together). Internal sac simple, without larger sclerotized structures.

Female. Unknown.

Length 7.8 mm.

Type material. Holotype (male): China: "CHINA: W Sichuan Kangding, 2800 m 30°04'N 101°58'E, 21.VII.1998, A. Smetana [C88]" / "1998 China Expedition J. Farkač, D. Král, J. Schneider & A. Smetana". In the SMETANA collection, Ottawa, Canada.

Geographical distribution. *Quedius haan* is at present known only from Kangding in west Sichuan.

Bionomics. The holotype was taken in a secondary coniferous forest (mostly *Pinus*, some *Abies*) by sifting moist debris and needles under a pile of branches left behind from a recently felled *Abies*-tree.

Recognition and comments. The holotype of *Quedius haan* is obviously quite similar to that of *Q. raan*; however, the presence of only four longer setae on each side of male sternite 8, the deeper medioapical emargination of this sternite, and particularly the differently shaped aedoeagus confirm that it represents a separate taxon. It is not without importance that specimens of *Q. raan* with aedoeagi identical to those of specimens from Hubei, also occur in the Kangding area (Zheduo Shankou=ThetoLa Pass).

Etymology. The specific epithet is the Chinese word "haan", which in one of its meanings means "rare" or "rarely seen". It refers to the fact that only one specimen of this species is known at present.

Quedius (Microsaurus) jyr sp. nov.

(Figs. 27–31)

Description. In all characters quite similar to *Q. koen* SMETANA, 2004 and different by the slightly larger and more robust body, and by the male sexual characters, particularly by the differently shaped aedoeagus.

Male. First four segments of front tarsus considerably dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 wider than apex of tibia (index 1.30); segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, with medioapical emargination similar to that of *Q. koen* (Fig. 27). Genital segment with tergite 10 wider than that of *Q. koen*, with markedly differentiated apical portion, with setae as in Fig. 28; sternite 9 not appreciably different from that of *Q. koen*, i.e. not emarginate apically. Aedoeagus (Figs. 29–31) markedly larger than that of *Q. koen*; median lobe with preapical portion less dilated and much less rounded laterally, apex subtruncate. Paramere quite similar to that of *Q. koen*, but more robust, rather deeply emarginate apically, with apex more distinctly distant from apex of median lobe; apical setae similar to those of *Q. koen*; underside of paramere as in *Q. koen*, without sensory peg setae.

Female. Unknown.

Length 8.0–8.2 mm.

Type material. Holotype (male): China: "CHINA Sichuan, Daxue Shan Mts., Gongga Shan env., 3300–3800 m" / "pass at autoroute 40 km NW from Moxi to

Kangding, 2.–5.VII.2004, leg. A. Plutenko”. In the SCHÜLKE collection, Berlin.

Paratype (male): China [Sichuan]: same data as holotype. In the SMETANA collection.

Bionomics. The specimens were taken from pitfall traps, but nothing is known about the habitat the traps were set in.

Geographical distribution. The species is known only from the type locality in the vicinity of Kangding.

Recognition and comments. The aedoeagus of *Q. jyr* is also similar to that of *Q. shuang* SMETANA, 2004, but the apical portion of median lobe of the aedoeagus of *Q. shuang* is markedly different, sternite 9 of male genital segment is emarginate apically (see Figs. 12, 13 in SMETANA, 2004, 89), and *Q. shuang* is distinctly smaller and more slender.

The type locality of this species “pass at autoroute 40 km NW from Moxi to Kangding” is likely identical with Zheduo Shankou (Theto La Pass) in Zheduo Shan.

Etymology. The specific epithet is the Chinese word “jyr”, which in one of its meanings means “to be noteworthy”.

Quedius (Microsaurus) biann sp. nov.

(Figs. 32–36)

Description. In all characters very similar to *Q. cingulatus*, but different as follows: body form more robust and on average slightly larger; head larger and wider, more distinctly wider than long (index 1.30; corresponding index in *Q. cingulatus* 1.21), eyes somewhat larger and more convex; punctuation of elytra sparser, elytra in many specimens pale testaceous, just like in *Q. cingulatus*; punctuation of abdominal tergites on average slightly less dense.

Male. First four segments of front tarsus considerably dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 slightly wider than apex of tibia (index 1.12); segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, with medioapical emargination similar to that of *Q. cingulatus* (Fig. 32). Genital segment with tergite 10 narrower than that of *Q. cingulatus*, with less numerous setae (Fig. 33); sternite 9 not appreciably different from that of *Q. cingulatus*. Aedoeagus (Figs. 34, 35) similar to that of *Q. cingulatus*, but paramere with apical portion narrower and more attenuate anteriorly, apical portion of median lobe therefore more exposed; sensory peg setae on underside of paramere situated in similar way to those of *Q. cingulatus*, but more numerous.

Female. First four segments of front tarsus markedly less dilated than those of male; segment 2 slightly narrower than apex of tibia (index 0.90). Genital segment with tergite 10 much longer than that of *Q. cingulatus*, considerably narrowed into rather sharp apex, with setae as in Fig. 36.

Length 5.8–6.7 mm.

Type material. Holotype (male): China: “CHINA Sichuan, Daxue Shan Mts.,

Gongga Shan env. 3300–3800 m”/“pass at autoroute 40 km NW from Moxi to Kangding 2.–3.VII.2004, leg. A. Plutenko”. In the SCHÜLKE collection, Berlin.

Allotype (female): China: “CHINA: W Sichuan, Pass Zheduo Shankou W Kangding, E slope, 3850 m 29°58'N 101°23'E 18.VII.1998 A. Smetana [C85]”. In the SMETANA collection, Ottawa.

Paratypes: China [Sichuan]: same data as holotype, 1 ♂, 6 ♀♀ (ASCC, MSC); same data as allotype, 3 ♀♀ (ASC); W Sichuan W Kangding, Zheduo Shan, alpine region with rhododendron, 4300–4500 m, 12.–22.VI.2004, leg. R. Fabbri, 3 ♀♀; “Wahuishan Shankou N side, 4,250 m Kangding Xian Sichuan”/“SW CHINA 28–IX–1996 S. Uéno leg., 1 ♀ (NSMT).

Geographical distribution. *Quedius biann* is at present known only from the Zheduo Shan, from an area around the pass Zheduo Shankou in Sichuan (see below under Comments).

Bionomics. The specimens collected by SMETANA were taken in a small gully by sifting leaf litter, other debris and moss under rhododendron, wild rose and *Salix* bushes along a small creek.

Recognition and comments. Specimens of *Quedius biann* may be easily distinguished from those of *Q. cingulatus* by the external characters given above alone.

Most specimens of the original series, collected by PLUTENKO, are in bad shape, with numerous appendages, or even elytra partially or entirely missing. The damage is obviously due to the prolonged exposure to the fluids in pitfall traps.

The holotype is a specimen with dark elytra.

Etymology. The specific epithet is the Chinese word “biann” (to distinguish). It refers to the relative easiness to recognize the species.

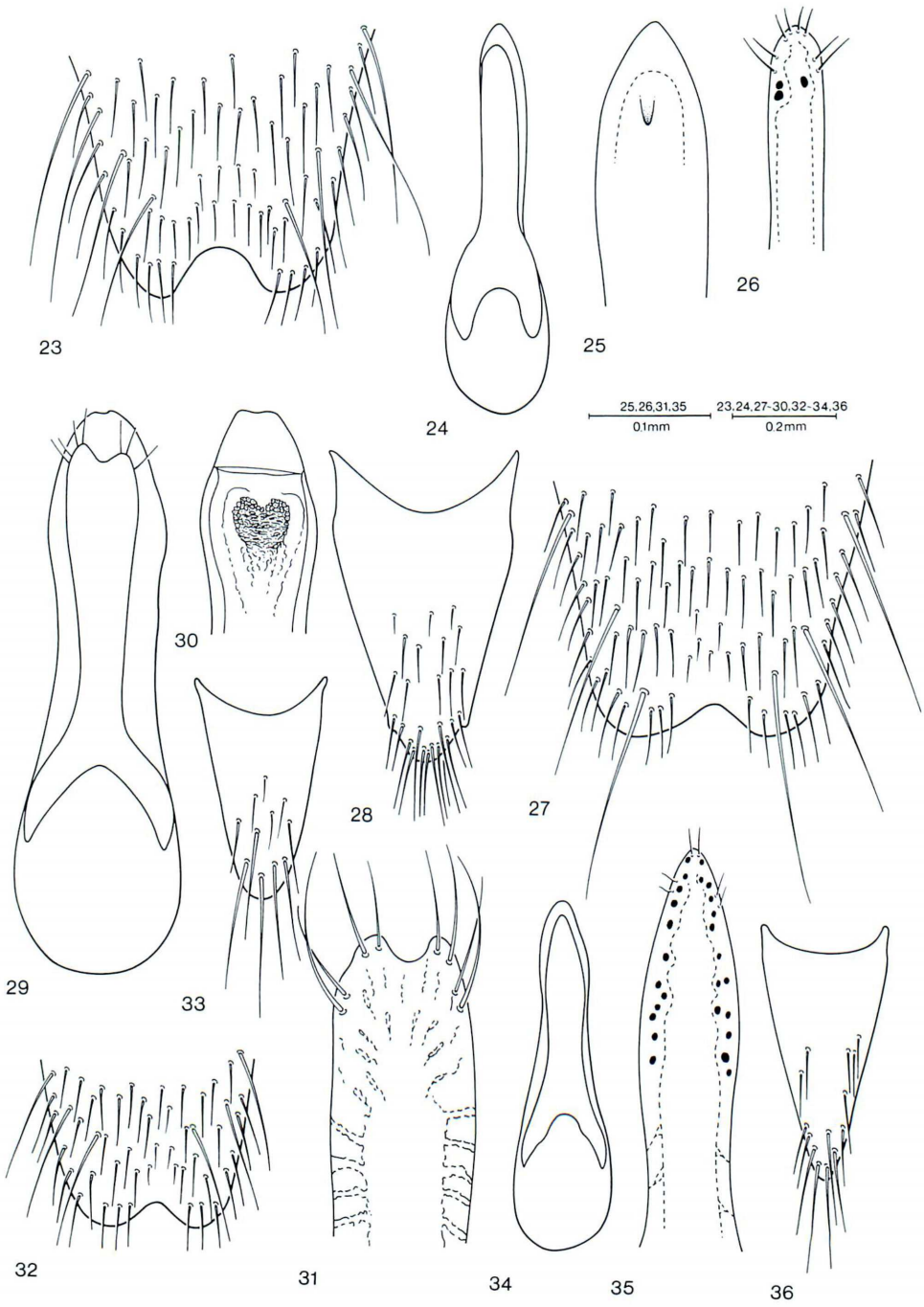
Quedius (Microsaurus) goong sp. nov.

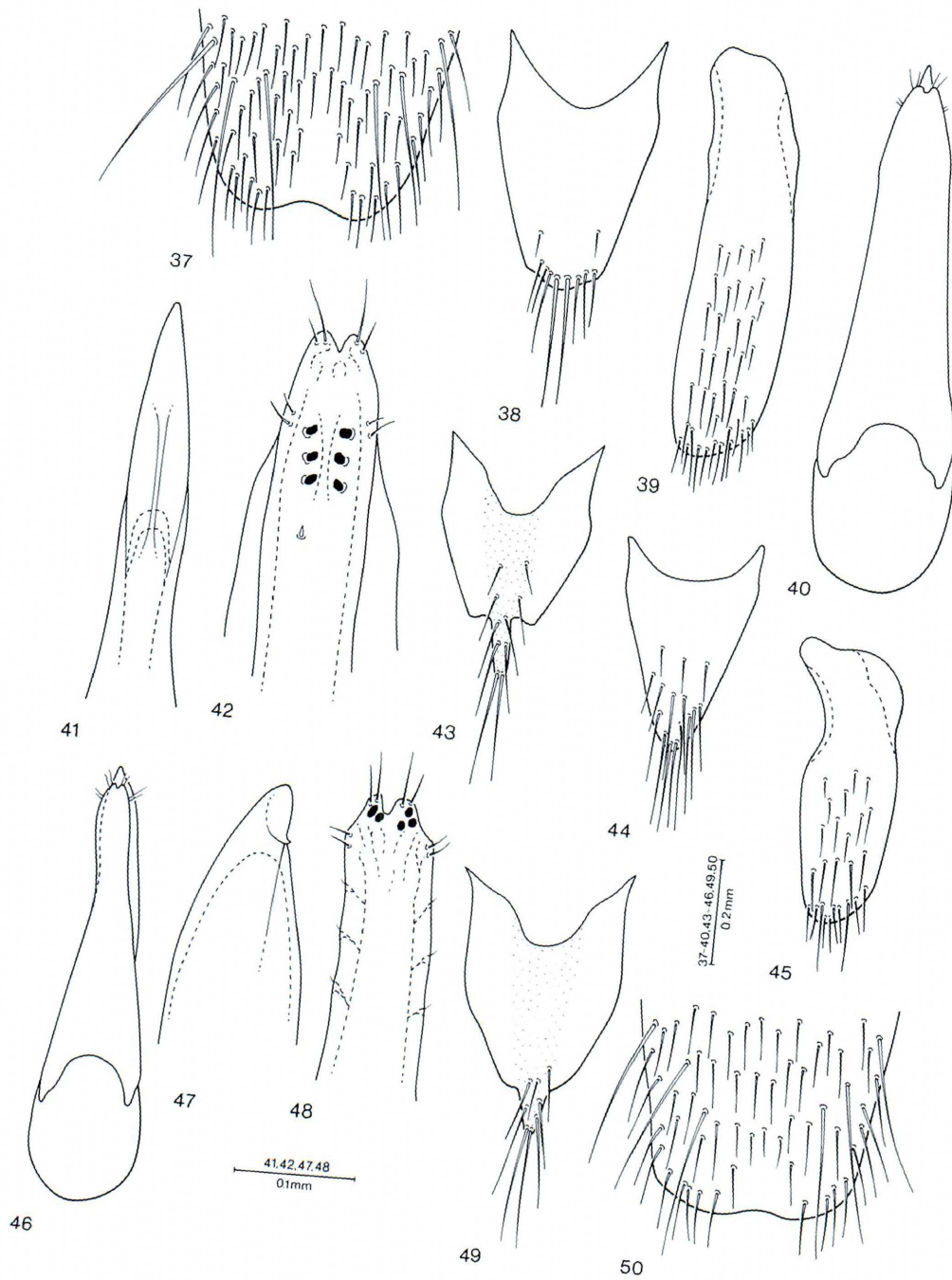
(Figs. 37–43)

Description. Piceous-black to black, all margins of pronotum narrowly, incon-

Figs. 23–36 (on p. 80). — 23–26. *Quedius haan*: 23, apical portion of male sternite 8; 24, aedeagus, ventral view; 25, apical portion of median lobe, ventral view; 26, apical portion of underside of paramere. — 27–31. *Quedius jyr*: 27, apical portion of male sternite 8; 28, tergite 10 of male genital segment; 29, aedeagus, ventral view; 30, apical portion of median lobe with internal sac; 31, apical portion of underside of paramere. — 32–36. *Quedius biann*: 32, apical portion of male sternite 8; 33, tergite 10 of male genital segment; 34, aedeagus, ventral view; 35, apical portion of underside of paramere; 36, tergite 10 of female genital segment.

Figs. 37–50 (on p. 81). — 37–43. *Quedius goong*: 37, apical portion of male sternite 8; 38, tergite 10 of male genital segment; 39, sternite 9 of male genital segment; 40, aedeagus, ventral view; 41, apical portion of median lobe, ventral view; 42, apical portion of underside of paramere; 43, tergite 10 of female genital segment. — 44–48. *Quedius jaang*: 44, tergite 10 of male genital segment; 45, sternite 9 of male genital segment; 46, aedeagus, ventral view; 47, apical portion of median lobe, ventral view; 48, apical portion of underside of paramere; 49, tergite 10 of female genital segment. — 50. *Quedius kwang*, apical portion of male sternite 8.





spicuously paler, rarely entire pronotum somewhat paler; abdomen slightly iridescent; maxillary and labial palpi brownish, antennae dark brownish to piceous, first three antennal segments paler at base, legs piceous with paler tarsi. Head rounded, slightly longer than wide (index 1.18), gradually narrowed toward neck behind eyes, posterior angles entirely absent; eyes large, convex, tempora considerably shorter than eyes seen from above (index 0.35); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posteriomedial margin of eye, separated from it by distance about equal to or shorter than diameter of puncture, two punctures between it and posterior margin of head, situated close to posterior margin, one additional puncture between posterior frontal puncture and temporal puncture, situated at posterior margin of eye; temporal puncture separated from posterior margin of eye by distance about equal to diameter of puncture; tempora with some fine punctures; surface of head with extremely fine, dense microsculpture of mostly transverse waves with intermixed microscopic punctures. Antenna moderately long, moderately widened toward apex, segment 3 slightly longer than segment 2 (index 1.25), segments 4–7 longer than wide, gradually becoming shorter, segments 8–10 about as long as wide, last segment about as long as two preceding segments combined. Pronotum vaguely wider than long (index 1.09), widest at about posterior third, distinctly more narrowed anteriorly than posteriorly, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not explanate; dorsal rows each with three punctures; sublateral rows each with three punctures, posterior puncture situated behind level of large lateral puncture; microsculpture similar to that of head but still finer and denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Elytra relatively long, at base slightly narrower than pronotum at widest point, scarcely widened posteriorly, at suture slightly (index 1.19), at sides moderately longer (index 1.33) than pronotum at midline; punctation and pubescence fine and moderately dense, transverse interspaces between punctures mostly larger than diameters of punctures; pubescence piceous-black; surface between punctures without microsculpture. Wings fully developed. Abdomen with tergite 7 (fifth visible) bearing fine whitish apical seam of palisade fringe; punctation of abdominal tergites similar to that on elytra, but somewhat denser, becoming sparser toward apical margin of each tergite and in general toward apex of abdomen; pubescence piceous; surface between punctures with excessively fine and dense microsculpture of transverse striae.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 wider than apex of tibia (index 1.20) segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, with moderately wide, very shallow, subarcuate medioapical emargination, triangular area before emargination flattened and smooth (Fig. 37). Genital segment with tergite 10 rather wide with widely subarcuate apex, with a few unequally long setae at apical margin and otherwise almost asetose (Fig. 38); sternite 9 with short and wide basal portion, apical portion wide, irregularly subtruncate apically, without

appreciably differentiated apical or subapical setae (Fig. 39). Aedoeagus (Figs. 40–42) moderately large, elongate; median lobe narrow, widely constricted in middle portion, narrowed into lancet-like apical portion with extremely narrow and sharp apex. Paramere large and wide, covering entire median lobe except for apex, with narrowly emarginate apex not reaching apex of median lobe; two fine setae at apex on each side of medial emargination, medial pair markedly longer than lateral pair, two minute setae at each lateral margin below apex; sensory peg setae on underside of paramere forming two medial longitudinal groups, each with three or four setae. Internal sac simple, without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but markedly less dilated; segment 2 about as wide as apex of tibia. Genital segment with tergite 10 pigmented medially, with markedly differentiated, rod-like apical portion bearing two long apical setae (Fig. 43).

Length 6.0–6.8 mm.

Type material. Holotype (male) and allotype (female): China: “CHINA: N-Yunnan Nujiang Lisu Aut. Pr. Gongshan Co. Gaoligong Shan, valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa, Canada.

Paratypes: China [Yunnan]: same data as holotype, 1 ♂ (ASC); same data, but M. Schülke [C2005–16], 5 ♂♂, 7 ♀♀ (ASC, MSC).

Geographical distribution. *Quedius goong* is known only from the type locality in the Gaoligong Shan, a mountain range west of the Salween river near the Myanmar border.

Bionomics. The specimens of the original series were taken in a large clearing in a coniferous forest by sifting leaf litter, various debris, moss and dead wood under rhododendron and broadleaved bushes along creeks and snowfields. Specimens of *Q. jaang*, *Q. kwang*, *Q. pyn* and *Q. lanugo* were collected in the same habitats.

Recognition and comments. *Quedius goong* is in all external characters very similar to the three sympatric species mentioned above and can be positively distinguished from most of them only by the male sexual characters, particularly by the quite characteristic aedoeagus.

Etymology. The specific epithet is the Chinese word “goong” (firm, strong).

Quedius (Microsaurus) jaang sp. nov.

(Fig. 44–49)

Description. In all characters quite similar to *Q. goong* and different mainly by the sexual characters, particularly by the differently shaped aedoeagus.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 slightly wider than apex of tibia (index 1.12) segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, with moderately wide, very shallow subarcuate

medioapical emargination, similar to that of *Q. goong*. Genital segment with tergite 10 markedly smaller and narrower than that of *Q. goong*, with more numerous setae (Fig. 44); sternite 9 markedly smaller, with short basal portion separated from apical portion by distinct constriction, apical portion wide, asymmetrically, widely obtuse apically, with two differentiated apical setae (Fig. 45). Aedoeagus (Figs. 46–48) moderately large, elongate, with both median lobe and paramere asymmetrical; median lobe narrow, with triangular, acute apical portion. Paramere large, slightly asymmetrical, sub-parallel-sided in middle portion, with obtuse, narrowly emarginate apex not quite reaching apex of median lobe; two fine setae at apex on each side of medial emargination and one or two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming one group close to apex of paramere on each side of medial emargination, each with two or three peg setae. Internal sac simple, without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but markedly less dilated; segment 2 about as wide as apex of tibia. Genital segment with tergite 10 similar to that of *Q. goong*, but differentiated rod-like apical portion shorter (Fig. 49).

Length 5.8–6.5 mm.

Type material. Holotype (male) and allotype (female): China: “CHINA: N-Yunnan Nujiang Lisu Aut. Pr. Gongshan Co. Gaoligong Shan, valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa, Canada.

Paratypes: China [Yunnan]: same data as holotype, 2♂♂ (ASC); same data, but M. Schülke [C2005–16], 4♂♂, 2♀♀ (ASC, MSC).

Geographical distribution. *Quedius jaang* is known only from the type locality in the Gaoligong Shan, a mountain range west of the Salween river near the Myanmar border.

Bionomics. The specimens of the original series were collected, together with those of *Q. goong*, in the same habitats described for that species.

Recognition and comments. Specimens of *Quedius jaang* may be positively distinguished from those of *Q. goong* only by the male sexual characters. The difference in the length of the differentiated apical portion of the female genital segment is small; however, it seems to be constant.

Etymology. The specific epithet is the Chinese word “jaang” (a chief, an elder).

***Quedius (Microsaurus) kwang* sp. nov.**

(Figs. 50–55)

Description. In all characters very similar to *Q. goong*, but different by slightly different coloration of body, and mainly by male sexual characters, particularly by characteristic shape of aedoeagus. Coloration in general paler, maxillary and labial palpi testaceous, antennae with first three segments entirely rufotestaceous, legs dark

brunneous to brunneous with paler tarsi and more or less darkened medial faces of middle and hind femora and tibiae. Pronotum dark rufobrunneous with darkened middle to entirely rufobrunneous, elytra brunneopiceous with paler humeral area to entirely brunneous, abdomen piceous to dark rufobrunneous, in general becoming paler toward apex.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 wider than apex of tibia (index 1. 20), segment 4 narrower than preceding segments. Sternite 8 with four long setae on each side, with very shallow, inconspicuous arcuate medioapical emargination, triangular area before emargination flattened and smooth (Fig. 50). Genital segment with tergite 10 markedly smaller and narrower than that of *Q. goong*, with more numerous setae (Fig. 51); sternite 9 with short and rather wide basal portion separated from apical portion by distinct constriction, apical portion evenly narrowed toward arcuate apex, with two differentiated apical setae (Fig. 52). Aedoeagus (Figs. 53, 54) moderately large, elongate, with both median lobe and paramere asymmetrical, in general similar to that of *Q. jaang*; median lobe narrow, evenly constricted in middle portion, with triangular, acute apical portion. Paramere very large, wide, covering most of median lobe, markedly asymmetrical, with obtuse, narrowly emarginate apex not quite reaching apex of median lobe; two fine setae at apex on each side of medial emargination and two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming one group close to apex of paramere on each side of medial emargination, each with two peg setae. Internal sac simple, without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but markedly less dilated; segment 2 about as wide as apex of tibia. Genital segment with tergite 10 with differentiated rod-like apical portion long, similar to that of *Q. goong* (Fig. 55).

Length 6.0–6.8 mm.

Type material. Holotype (male) and allotype (female): China: “CHINA: N-Yunnan Nujiang Lisu Aut. Pr. Gongshan Co. Gaoligong Shan, valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa, Canada.

Paratypes: China [Yunnan]: same data as holotype, 1 ♀ (ASC); same data, but M. Schülke [C2005–16], 2 ♀♀ (MSC).

Geographical distribution. *Quedius kwang* is known only from the type locality in the Gaoligong Shan, a mountain range west of the Salween river near the Myanmar border.

Bionomics. The specimens of the original series were collected, together with those of *Q. goong*, in the same habitats described for that species.

Recognition and comments. *Quedius kwang* differs from the two habitually similar species occurring in the same habitat in Gaoligong Shan (*Q. goong* and *Q. jaang*), in addition to the different sexual characters, by the uniformly pale first three antennal

segments. *Quedius pyn*, the fourth species from the same habitat, displays the same coloration of the first three antennal segments, but it differs by some external characters (see below), and by the entirely different aedoeagus.

Etymology. The specific epithet is the Chinese word “kwang” (to deceive). It refers to the close similarity of the species to *Q. goong* and *Q. jaang*.

***Quedius (Microsaurus) pyn* sp. nov.**

(Figs. 56–60)

Description. In all characters similar to *Q. goong*, but different as follows: body larger and more robust; abdomen, starting with fourth visible tergite, becoming gradually paler toward apex; maxillary and labial palpi testaceous, antennae with first three segments entirely rufotestaceous, legs piceous with paler tarsi. Head markedly larger, slightly wider than long (index 1.1), eyes larger and more convex, tempora less distinctly shorter than eyes from above (index 0.60). Pronotum more voluminous, more distinctly narrowed anteriorly, elytra shorter, at suture vaguely shorter (index 0.92), at sides about as long as pronotum at midline. Punctuation of abdominal tergites sparser.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 wider than apex of tibia (index 1.15), segment 4 narrower than preceding segments. Sternite 8 sparsely pubescent, with three long setae on each side, with wide and moderately deep, obtusely triangular medioapical emargination, triangular area before emargination flattened and smooth (Fig. 56). Genital segment with tergite 10 smaller and narrower than that of *Q. goong*, with more numerous setae (Fig. 57); sternite 9 with short basal portion separated from apical portion by distinct constriction, apical portion evenly narrowed toward arcuate apex, without differentiated apical or subapical setae (Fig. 58). Aedoeagus (Figs. 59, 60) small, symmetrical; median lobe narrow, slightly, widely constricted in middle portion, with subacute apex. Paramere moderately large, fusiform, with obtuse, narrowly emarginate apex not quite reaching apex of median lobe; two fine setae at apex on each side of medial emargination and two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming one group close to apex of paramere on each side of medial emargination, each with three peg setae. Internal sac simple, without larger sclerotized structures.

Female. Unknown.

Length 6.8 mm.

Type material. Holotype (male): China: “CHINA: N-Yunnan Nujiang Lisu Aut. Pr. Gongshan Co. Gaoligong Shan, valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa, Canada.

Geographical distribution. *Quedius pyn* is known only from the type locality in the Gaoligong Shan, a mountain range west of the Salween river near the Myanmar border.

Bionomics. The holotype was collected, together with those of *Q. goong*, in the

same habitats described for that species.

Recognition. *Quedius pyn* differs from all three other species, occurring in the same habitat (see above), in addition to the entirely different aedoeagus, by the external body characters delineated above. The coloration of the first three antennal segments is the same as that in *Q. kwang*. The aedoeagus of *Q. pyn* resembles that of *Q. euander* SMETANA, 1997, but specimens of *Q. euander* are markedly smaller and differ in several external characters, as well as in the characteristic shape of sternite 9 of the male genital segment (see fig. 30 in SMETANA, 1997 a, 61).

Etymology. The specific epithet is the Chinese word “pyn” (urgent).

***Quedius (Microsaurus) terng* sp. nov.**

(Figs. 61–67)

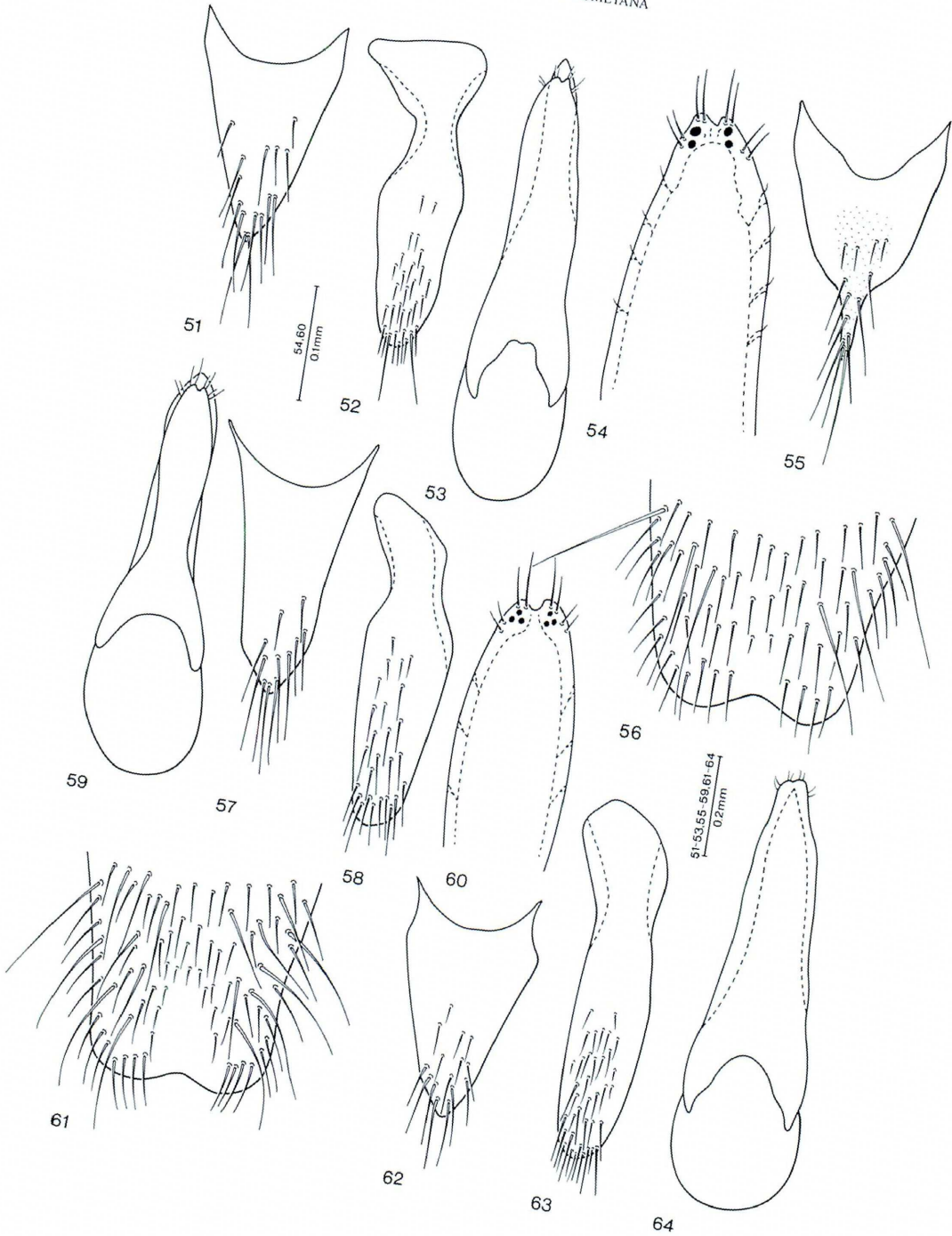
Description. In all characters very similar to *Q. zheduo* and different mainly by sexual characters. Size on average larger.

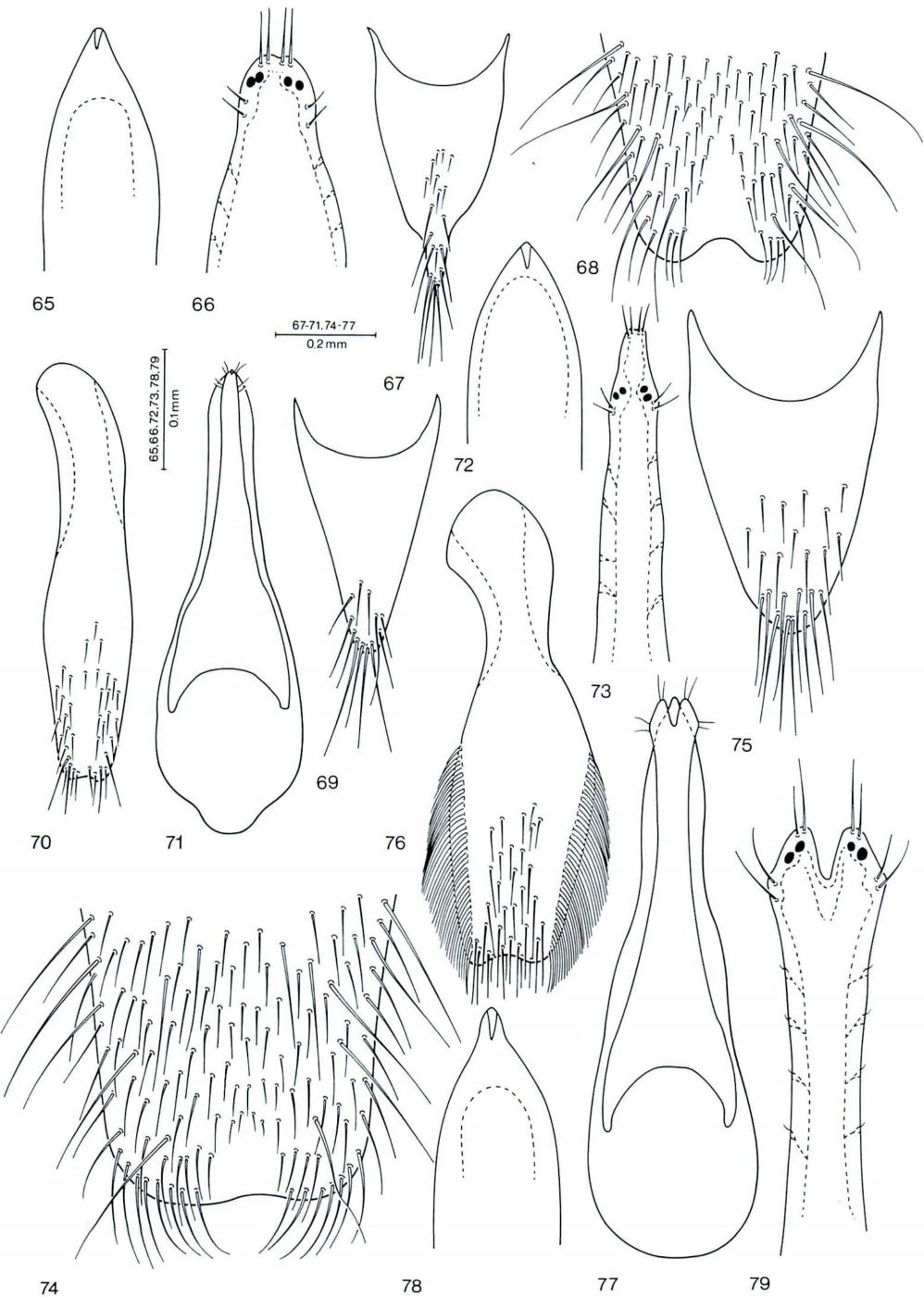
Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 markedly wider than apex of tibia (index 1.20), segment 4 narrower than preceding segments. Sternite 7 not modified. Sternite 8 with many long setae on each side, with rather narrow and shallow, obtusely triangular medioapical emargination, large triangular area before emargination flattened and smooth (Fig. 61). Genital segment with tergite 10 somewhat wider than that of *Q. zheduo* and with less numerous setae (Fig. 62); sternite 9 narrower and markedly longer, with rather wide basal portion, apical portion evenly narrowed toward arcuate apex, without differentiated apical or subapical setae (Fig. 63). Aedoeagus (Figs. 64–66) similar to that of *Q. zheduo*, small, almost symmetrical; median lobe less markedly narrowed anteriad, subparallel-sided in middle portion, with minute medial carina on face adjacent to paramere. Paramere less markedly narrowed anteriad, with slightly differentiated apical portion, with obtuse, slightly emarginate apex somewhat exceeding apex of median lobe; two fine setae at each side of medial emargination and two similar but smaller setae at each lateral margin below apex; sen-

Figs. 51–64 (on p. 88). — 51–55. *Quedius kwang*: 51, tergite 10 of male genital segment; 52, sternite 9 of male genital segment; 53, aedoeagus, ventral view; 54, apical portion of underside of paramere; 55, tergite 10 of female genital segment. — 56–60. *Quedius pyn*: 56, apical portion of male sternite 8; 57, tergite 10 of male genital segment; 58, sternite 9 of male genital segment; 59, aedoeagus, ventral view; 60, apical portion of underside of paramere. — 61–64. *Quedius terng*: 61, apical portion of male sternite 8; 62, tergite 10 of male genital segment; 63, sternite 9 of male genital segment; 64, aedoeagus, ventral view.

Figs. 65–79 (on p. 89). — 65–67. *Quedius terng*: 65, apical portion of median lobe, ventral view; 66, apical portion of underside of paramere; 67, tergite 10 of female genital segment. — 68–73. *Quedius fabbrii*: 68, apical portion of male sternite 8; 69, tergite 10 of male genital segment; 70, sternite 9 of male genital segment; 71, aedoeagus, ventral view; 72, apical portion of median lobe, ventral view; 73, apical portion of underside of paramere. — 74–79. *Quedius lanugo*: 74, apical portion of male sternite 8; 75, tergite 10 of male genital segment; 76, sternite 9 of male genital segment; 77, aedoeagus, ventral view; 78, apical portion of median lobe; 79, apical portion of underside of paramere.

Aleš SMETANA





sory peg setae on underside of paramere forming two lateral groups close to apex of paramere, each with one or two closely set pegs. Internal sac simple, without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but markedly less dilated; segment 2 about as wide as apex of tibia. Genital segment with tergite 10 similar to that of *Q. zheduo*, but with considerably longer, vaguely differentiated apical portion (Fig. 67).

Length 6.2–7.0 mm.

Type material. Holotype (male): China: “CHINA: N-Yunnan [C2005–10] Diqing Tibet. Aut. Pref., Deqin Co., Baima Shan, pass 15 km SE Deqin, 4330m”/ “28°22.68’N 99°00.57’E, meadows, Azalea, Juniperus, leaf litter, grass, moss, sifted, 12.VI.2005, M. Schülke [C2005–10]”. In the SCHÜLKE collection, Berlin.

Allotype. China: “CHINA N-Yunnan Diqing Tibet. Aut. Pr. Deqin Co. Baima Shan E-side pass 12 km SE Deqin 28°23.86’N 98°59.04’E 4085 m 10.VI.2005 A. Smetana [C157]”. In the SMETANA collection, Ottawa.

Paratypes: China: [Yunnan]: same data as holotype, 1 ♀ (MSC); same data as holotype, but A. Smetana [C159], 2 ♀♀ (ASC); same data as allotype, but 4200–4300 m, small creek valley (Abies forest with Rhododendron), D. W. Wrase [08B], 1 ♂, 2 ♀♀ (ASC, MSC); same data, but pass 25 km SE Deqin, 4225 m, 28°19.38’N 99°05.47’E, small creek valley, Rhododendron, Salix, leaf litter, moss, dead wood, sifted, 8.VI.2005, M. Schülke [C2005–06], 1 ♀; same data as previous, but alpine pasture, under stones, D.W. Wrase [06C], 1 ♂ (MSC).

Geographical distribution. *Quedius terng* is at present known only from the Baima Shan in northern Yunnan.

Biomomics. The specimens were collected in subalpine and alpine habitats by sifting moss, leaf litter, dead wood and other debris under Rhododendron, Azalea, Salix and Juniperus growths.

Recognition and comments. Specimens of *Q. terng* are in all external characters also quite similar to those of *Q. tronqueti* SMETANA, 1999 and *Q. janatai* SMETANA, 2004, but the aedoeagi of the two species are different (see SMETANA, 1999, 237, figs. 55–57; SMETANA, 2004, 93, figs. 28, 29).

Etymology. The specific epithet is the Chinese word “terng” (to ascend). It refers to the occurrence of this species in high altitude mountain habitats.

Quedius (Microsaurus) fabbrii sp. nov.

(Figs. 68–73)

Description. In all characters very similar to *Q. zheduo* and different mainly by sexual characters.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 markedly wider than apex of tibia (index 1.24), segment 4 narrower than preceding segments. Sternite 7 not

modified. Sternite 8 with six long setae on each side, with moderately wide and deep, arcuate medioapical emargination, large triangular area before emargination flattened and smooth (Fig. 68). Genital segment with tergite 10 markedly more elongate than that of *Q. zheduo* (Fig. 69); sternite 9 longer, with less wide basal portion, apical portion evenly narrowed toward subtruncate, medially slightly emarginate apex, with two differentiated apical setae at each side of medial emargination (Fig. 70). Aedoeagus (Figs. 71–73) with voluminous basal bulb; median lobe narrowed anteriorly to about apical third, from there subparallel-sided and then narrowed into subacute apex. Paramere symmetrical, very wide basally, middle portion narrowed into parallel-sided, narrow apical portion with narrowly subtruncate, feebly emarginate apex about reaching apex of median lobe; four fine setae at apex, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming two lateral groups below apex, each with two closely set pegs. Internal sac simple, without larger sclerotized structures.

Female. Unknown.

Length 6.0–6.7 mm.

Type material. Holotype (male): China: “CHINA–NW Sichuan, 3500 m between Sanggarmai–Sanggarpar relict coniferous forest, 8.–29.VI.2004, leg. R. Fabbri. In the SCHÜLKE collection, Berlin.

Paratype: China: [Sichuan]: same data as holotype, 1 ♂ (ASC).

Geographical distribution. *Quedius fabbrii* is at present known only from the type locality in northwestern Sichuan.

Bionomics. Specimens were apparently collected from pitfall traps set in an original coniferous forest.

Recognition. Specimens of *Q. fabbrii* may be positively recognized only by the shape of the aedoeagus. Unlike the males of *Q. zheduo*, the males of *Q. fabbrii* lack the modification of the apical margin of the seventh abdominal sternite, but this character state is shared with the males of *Q. terng* sp. nov., *Q. tronqueti* and *Q. janatai*.

Etymology. Patronymic, the species was named in honour of the collector, Mr. R. FABBRI, Museo Civico di Storia Naturale, Ferrara, Italy.

Quedius (Microsaurus) lanugo sp. nov.

(Figs. 74–79)

Description. Black; abdomen slightly iridescent; maxillary and labial palpi brownish piceous, antennae piceous black, first three antennal segments paler at base, legs piceous black with paler tarsi. Head rounded, slightly longer than wide (index 1.19), gradually narrowed toward neck behind eyes, posterior angles entirely absent; eyes large, convex, tempora considerably shorter than eyes seen from above (index 0.34); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posteriomedial margin of eye, separated from it by distance about equal to diameter of puncture, two punctures between it and posterior

margin of head, situated close to posterior margin, one additional puncture between posterior frontal puncture and temporal puncture, situated at posterior margin of eye; temporal puncture separated from posterior margin of eye by distance about twice as large as diameter of puncture; tempora with some fine punctures; surface of head with extremely fine, dense microsculpture of mostly transverse waves. Antenna moderately long, moderately widened toward apex, segment 3 longer than segment 2 (index 1.26), segments 4–7 longer than wide, gradually becoming shorter, segments 8–10 about as long as wide, last segment slightly shorter than two preceding segments combined. Pronotum about as long as wide, widest at about posterior third, slightly more narrowed anteriorly than posteriorly, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not explanate; dorsal rows each with three punctures; sublateral rows each with three punctures, posterior puncture situated behind level of large lateral puncture; microsculpture similar to that of head but still finer and denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Elytra relatively long, at base slightly narrower than pronotum at widest point, scarcely widened posteriorly, at suture vaguely longer (index 1.07), at sides slightly longer (index 1.16) than pronotum at midline; punctation and pubescence very fine and rather sparse, transverse interspaces between punctures mostly 3–4 times larger than diameters of punctures; pubescence piceous-black; surface between punctures without microsculpture. Wings apparently fully developed. Abdomen with tergite 7 (fifth visible) bearing fine whitish apical seam of palisade fringe; punctation of abdominal tergites similar to that on elytra, but somewhat denser, becoming sparser toward apical margin of each tergite and in general toward apex of abdomen; pubescence piceous; surface between punctures with excessively fine and dense microsculpture of transverse striae.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 markedly wider than apex of tibia (index 1.30), segment 4 narrower than preceding segments. Sternite 8 with seven long setae on each side, with extremely shallow, inconspicuous, arcuate medioapical emargination, small triangular area before emargination flattened and smooth (Fig. 74). Genital segment with tergite 10 moderately large and wide, with arcuate apex, setose as in Fig. 75; sternite 9 with large basal portion, separated from apical portion by distinct constriction, apical portion very large and wide, irregularly subtruncate apically, without appreciably differentiated apical or subapical setae, but with both lateral portions densely covered with long, fine, hair-like setae (Fig. 76). Aedoeagus (Figs. 77–79) rather large, elongate; median lobe narrow, widely constricted at about apical third and then narrowed into apical portion with short, subtriangular apex. Paramere elongate, with narrow middle portion gradually dilated into characteristic apical portion with apex deeply emarginate and almost reaching apex of median lobe; two fine setae at apex on each side of medial emargination and two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming a group of two or three setae at each side of medial emargination. Internal sac simple,

without larger sclerotized structures.

Female. Unknown.

Length 7.1–7.5 mm.

Type material. Holotype (male): China: “CHINA: N-Yunnan Nujiang Lisu Aut. Pr. Gongshan Co. Gaoligong Shan, valley at 3000–3050 m 27°47.90'N 98°30.19'E 21.VI.2005 A. Smetana [C169]”. In the SMETANA collection, Ottawa.

Paratype (male): China: [Yunnan]: same data, + “conif. Forest with *Rhododendron*, broad leaved bushes, litter, moss, dead wood, sifted along creek and snowfields”, M. Schülke [C2005–16] (MSC).

Geographical distribution. *Quedius lanugo* is known only from the type locality in the Gaoligong Shan, a mountain range west of the Salween river near the Myanmar border.

Bionomics. The specimens of the original series were taken in a large clearing in a coniferous forest by sifting leaf litter, various debris, moss and dead wood under rhododendron and broadleaved bushes along creeks and snowfields. Specimens of *Q. goong*, *Q. jaang*, *Q. kwang*, and *Q. pyn* were collected in the same habitats.

Recognition and comments. *Quedius lanugo* may be rather easily distinguished from all other species of the *Euryalus* group, in addition to the characteristic shape of the aedeagus and the unique setation of sternite 9 of the male genital segment, by the dark coloration of the relatively large body and the appendages, and by the very inconspicuous medial emargination of the male sternite 8.

The paratype is missing the left antenna except for three basal segments, and the entire left hind leg.

Etymology. The specific epithet is the Latin noun *lanugo*, -inis, f. (delicate downy hairs) in apposition. It refers to the presence of the dense, delicate hair-like setae on the male sternite 9.

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要 約

A. SMETANA: 中国産ツヤムネハネカクシ亜族に関する知見. 27. ツヤムネハネカクシ属 *Microsaurus* 亜属の15. — *Microsaurus* 亜属のツヤムネハネカクシ類の12新種を云南省と四川省から記載し, 併せて22既知種の新産地を記録した. そのうちの1種 *Quedius antennalis* については, *Q. birmanus* の上位同物異名であることを明らかにした.

References

CAMERON, M., 1932. Coleoptera. Staphylinidae. Vol. III. *The Fauna of British India, including Ceylon*

- and Burma. XIII+443 pp., 4 pls. Taylor & Francis, London.
- CHAMPION, G. C., 1925. Some Indian (and Tibetan) Coleoptera (16.). *Entomologist's mon. Mag.*, **61**: 101–112.
- DEJEAN, P. F. M. A., 1833. Catalogue des Coléoptères de la collection de M. Le Baron DEJEAN. Ed 2., fasc.1–2, pp. 1–176. Méquignon-Marvis, Paris.
- EPPELSHEIM, E., 1895. Zur Staphylinidenfauna Ostindiens. *Deutsche ent. Z.*, **1895**: 385–408.
- REITTER, E., 1887. Insecta in itinere Cl. N. PRZEWALSKII in Asia Centrali novissime lecta. VI. Clavicornia, Lamellicornia et Serricornia. *Horae Soc. ent. ross.*, **21**: 201–234.
- SMETANA, A., 1988. Revision of the tribes Quediini and Atanygnathini. Part II. The Himalayan Region (Coleoptera: Staphylinidae). *Quaest. ent.*, **24**: 163–464.
- 1995. Contributions to the knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China. Genus *Quedius* STEPHENS, 1829. Part 2. Subgenus *Microsaurus* DEJEAN, 1833. Section 2. *Bull. natn. Sci. Mus., Tokyo*, (A), **21**: 231–250
- 1996 a. Ditto. Part 3. Subgenus *Microsaurus* DEJEAN, 1833. Section 3. *Ibid.*, **22**: 1–20.
- 1996 b. Ditto. Part 5. Subgenus *Microsaurus* DEJEAN, 1833. Section 4. *Ibid.*, **22**: 113–132
- 1997 a. Ditto. Part 6. Subgenus *Microsaurus* DEJEAN, 1833. Section 5. *Ibid.*, **23**: 51–68.
- 1997 b. Ditto. Part 8. Quediini collected by S. UENO and Y. WATANABE in Yunnan. *Elytra, Tokyo*, **25**: 129–134.
- 1997 c. Ditto. Part 9. Subgenus *Microsaurus* DEJEAN, 1833. Section 7. *Ibid.*, **25**: 451–473.
- 1999. Ditto. Part 13. Subgenus *Microsaurus* DEJEAN, 1833. Section 8. *Ibid.*, **27**: 213–240.
- 2001. Ditto. Part 19. Subgenus *Microsaurus* DEJEAN, 1833. Section 11. *Ibid.*, **29**: 181–191.
- 2002. Ditto. Part 22. Subgenus *Microsaurus* DEJEAN, 1833. Section 12. *Ibid.*, **30**: 137–151.
- 2004. Ditto. Part 24. Subgenus *Microsaurus* DEJEAN, 1833. Section 14. *Ibid.*, **32**: 85–103.